

PEARSON, J.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

ASK CHEMICALS LLC,

Plaintiff,

v.

NOVIS WORKS, LLC,

Defendant.

)
) CASE NO. 5:19CV1585
)
)

) JUDGE BENITA Y. PEARSON
)
)

) **MEMORANDUM OF OPINION AND**
) **ORDER** [Resolving ECF Nos. [53](#), [54](#)]
)

The Special Master¹ submitted a Report and Recommendation construing the terms “bisphenol F,” “epoxy novolac resin,” and “or mixed with another of said components” in Claim 7 of [U.S. Patent No. 6,686,402](#) (“the ‘402 Patent”). [ECF No. 51](#). Defendant Novis Works, LLC (“Novis Works”) objects to the Special Master’s recommended construction of the first two terms. [ECF No. 53](#). The objections have been fully briefed. ECF Nos. [53](#), [57](#), and [59](#). Plaintiff ASK Chemicals LLC (“ASK”) moves the Court to adopt the claim constructions of the Special Master. [ECF No. 54](#). For the reasons given below, Novis Works’ objections are overruled. ASK’s motion is granted.

As explained below, the Court adopts the Special Master’s Report and Recommendation in full.

¹ The Court appointed Special Master Michael W. Vary, pursuant to [Fed. R. Civ. P. 53](#), with the agreement of the parties. [ECF No. 23](#).

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I. Background

ASK brought this patent infringement suit against Novis Works, alleging that Novis Works' product infringed on its ['402 Patent](#). [ECF No. 1](#). Novis Works counterclaims. [ECF No. 8](#).

Claim 7 of the ['402 Patent](#) provides:

7. A foundry mix comprising:

- (a) a major amount of a foundry aggregate;
- (b) an effective binding amount of a binder system, which will cure in the presence of sulfur dioxide and a free radical initiator, comprising:
 - (1) 20 to 70 parts by weight of an *epoxy novolac resin*;
 - (2) 20 to 40 parts by weight of a monomeric or polymeric acrylate;
 - (3) 1 to 35 parts by weight of *bisphenol F*; and
 - (4) an effective amount of a free radical initiator, where (1), (2), (3), and (4) are separate components *or mixed with another of said components*, provided (4) is not mixed with (2), and where said parts by weight are based upon 100 parts of binder system.

['402 Patent, col. 12, II. 17-30](#) (emphasis added). The Court appointed the Special Master to assist the Court with the claim construction aspect of this case. [ECF No. 23 at Page ID #341](#). Specifically, the Special Master was tasked with construing the terms italicized above in Claim 7: (1) "bisphenol F;" (2) "epoxy novolac resin;" and (3) "or mixed with another of said components." [Id.](#)

The Special Master conducted a *Markman*² hearing to construe the relevant terms in Claim 7 of the ['402 Patent](#),³ and, subsequently, issued a report recommending his suggested

² [Markman v. Westview Instruments, Inc., 517 U.S. 370 \(1996\)](#).

³ [ECF No. 41](#).

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construction of the terms in Claim 7. [ECF No. 51](#). In that Report, the Special Master articulates that he relied on the following definition of a person having ordinary skill in the art:

(a) an individual having an earned degree in Chemistry, either a B.S. or a B.A., or an equivalent degree in Chemistry, Polymer Chemistry or Chemical Engineering, which degree stems from a significant course load that includes organic chemistry, having a working knowledge of the principles of polymer chemistry including a knowledge of chemical reactions of monomers and prepolymers, which working knowledge stems from any source, including from education or experience, along with a limited and basic understanding of physical properties of monomers and pre-polymers, and polymers prepared therefrom, including their viscosity (monomers) and compressibility, tensile strength and impact resistance (polymers prepared therefrom); or (b) an individual, through his or her extensive work experience and natural aptitude or talent for science and technology, acquires the equivalent skill and knowledge as the person described in part (a), above, without the need for formal university education (estimated to be at least five years of work experience).

[ECF No. 51 at PageID #: 3246](#).

II. Standard of Review

Pursuant to [FED. R. CIV. P. 53\(f\)\(3\) and \(f\)\(4\)](#), the Court is to decide *de novo* all objections to findings of fact and conclusions of law made or recommended by the Special Master.⁴ The terms must be construed in “the meaning that the term would have to a person of ordinary skill in the art.” [Phillips v. AWH Corp.](#), 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc)

⁴ See also Order Appointing Special Master, [ECF No. 23 at PageID #344](#), (stating “The Special Master’s finding of facts, if properly objected to, shall be reviewed *de novo* pursuant to [Rule 53\(f\)\(3\)](#). Under [Rule 53\(f\)\(4\)-\(5\)](#), the Court shall decide *de novo* all objections to conclusions of law made or recommended by the Special Master; and the Court shall set aside a ruling by the Special Master on a procedural matter only for an abuse of discretion. The Court shall retain sole authority to issue final rulings on matters formally submitted for adjudication, unless otherwise agreed by the parties, and subject to waiver of objection to written order or recommendations as described above.”).

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(citations omitted). When interpreting claims, “the court should look first to the intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification, and, if in evidence, the prosecution history.” [*Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 \(Fed. Cir. 1996\)](#) (citations omitted).

III. Discussion

Novis Works objects to the Special Master’s Report and Recommendation, particularly the suggested construction of the first two disputed terms, “bisphenol F” and “epoxy novolac resin.” Novis Works has not lodged an objection to the Special Master’s construction of the term “or mixed with another of said components.”

A. “bisphenol F”

In Claim 7, there are two chemicals relevant to the parties’ dispute over the meaning of “bisphenol F.” Novis Works suggests that the term refers to a bisphenol-F monomer (“monomer”). Before the Special Master issued his Report, ASK urged the Special Master to find that the term refers to bisphenol-F epoxy resin (“epoxy resin”), which is “a reaction product of bisphenol-F monomer and epichlorohydrin in the presence of an alkaline catalyst (typically NaOH) by methods well known in the art.”⁵ [ECF No. 51 at PageID #: 3247-48](#). The resolution of the dispute hinges on whether the term “bisphenol F” in Claim 7 refers solely to the monomer.

⁵ ASK now urges the Court to adopt the Special Master’s construction.

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1. Varied Uses of “bisphenol F”

In his Report, the Special Master found that the term relevant in Claim 7 was a broad term encompassing both the monomer and other relevant compounds such as the epoxy resin.⁶ [Id. at PageID #: 3261](#). Specifically, the Special Master found that “[bisphenol F]” “would be understood by one skilled in the art to encompass the narrower terms ‘bisphenol-F monomer’, ‘bisphenol epoxy resin’ and ‘bisphenol-F diglycidyl ether’, and perhaps other bisphenol-F derivatives.” [Id.](#)

The Special Master recognized that, in certain parts of the patent, the term “bisphenol F” without any modifier refers to the monomer and any use of “bisphenol F epoxy resin” indicates the epoxy resin as opposed to the monomer. [ECF No. 51 at PageID #: 3250](#) (“Together, these different uses make clear that, depending on the context within the specification, ‘bisphenol F’ as a stand-alone term may be a reference to the monomer *or*, when combined with other term modifiers, the epoxy resin.”) (emphasis in original). Specifically, “bisphenol F” clearly refers to the monomer in the following instances of the [‘402 Patent](#): (1) column 5, II. 4-6 (“Other commonly used epoxy resins include the diglycidyl ethers of other bisphenol compounds such as bisphenol B, F, G, and H.”); (2) column 5, II. 54-60:

Other epoxy resins, such as bisphenol A epoxy resin and bisphenol F epoxy resin, and monomeric bisphenol compounds, such as bisphenol A, may be added to the binder.

⁶ Although the Special Master’s construction was neither of the parties’ suggested constructions, “[t]he Court . . . may arrive at its own construction of claim terms, which may differ from the constructions proposed by the parties.” [Flexsys Am. LP v. Kumho Tire U.S.A., Inc.](#), 695 F. Supp. 2d 609, 614 (N.D. Ohio 2010) (citing [Pfizer, Inc. v. Teva Pharm., USA, Inc.](#), 429 F.3d 1364, 1376 (Fed. Cir. 2005)).

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Examples of other epoxy resins include halogen-substituted aliphatic epoxides and diglycidyl ethers of other bisphenol compounds such as bisphenol B, F, G, and H.

; and (3) column 7, II. 55-57 (describing “Bis F epoxy resin” as “epoxy resin prepared from bisphenol F having an average molecular weight of about 340 and a functionality of about 2.05”). In these instances, when “bisphenol F” stands alone without the “epoxy resin” modifier, it is clear that the patentee was referring to the monomer.

There are instances, the Special Master suggests, when the use of the term “bisphenol F” is ambiguous.⁷ [ECF No. 51 at PageID #: 3252-53](#). Despite the potential ambiguity, there are “additional clues in the intrinsic record as to what the inventor intended the term [bisphenol F] in claim 7 to mean, which one skilled in the art would most certainly understand.” [Id. at PageID #: 3254](#). According to the Special Master, there are at least two instances in the patent’s written description in which “bisphenol F” refers to the broader range of its variants. Specifically, the Special Master honed in on the patent’s abstract and background, which provides for, in relevant part, “a bisphenol F.” [‘402 Patent, abstract; col. 1, II. 20-21](#) (emphasis added). The Special Master noted that use of the article “a” in front of “bisphenol F,” is “common place chemical nomenclature” that should be interpreted as signaling “‘one of a class’ or ‘one of several’ or

⁷ The Special Master originally found that the references to “bisphenol F” in the abstract and background, among other instances in the patent, were ambiguous. [ECF No. 51 at PageID #: 3251-52](#). After considering the intrinsic evidence, the Special Master determined the appropriate meaning of the term in the abstract and background. [Id. at PageID #: 3259](#). Because the Special Master resolved potential ambiguities by relying on the intrinsic evidence, there is no error. See [Intel Corp. v. VIA Techs., Inc., 319 F.3d 1357, 1367 \(Fed. Cir. 2003\)](#) (“When an analysis of *intrinsic* evidence resolves any ambiguity in a disputed claim term, it is improper to rely on extrinsic evidence to contradict the meaning so ascertained.”) (citing [Vitronics, 90 F.3d at 1583](#)) (emphasis in original).

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‘any’, all of which plainly suggests the inventors viewed ‘bisphenol-F’ to be a more expansive group of compounds” rather than just the monomer. [ECF No. 51 at PageID #: 3259](#). In other words, by placing “a” before “bisphenol F,” “the inventors . . . were trying to ‘tip’ the reader into understanding that the notion of ‘bisphenol-F’ is an expansive one, not a narrow one.” *Id.*

Novis Works contends that even if the Court accepts the Special Master’s reading of the abstract and background, it should have little impact on the Court’s finding because there is no such “a” article before “bisphenol F” in Claim 7 of the patent. According to Novis Works, if “a” were meant to “tip” the reader that “bisphenol F” is a broad term in the abstract and background, *see id.*, the omission of the article “a” before “bisphenol F” in Claim 7 suggests that “bisphenol F” in that claim refers only to the monomer. Contrary to Novis Works’ contention, the lack of an “a” in Claim 7 before “bisphenol F” does not preclude the Special Master’s construction. The abstract and background indicates that “bisphenol F” itself does not refer solely to the monomer throughout the patent. It does not suggest that the inventors *must* have used an “a” in front of “bisphenol F” in Claim 7 in order for a person of ordinary skill in the art to understand that the term should be construed broadly.

Because the term “bisphenol F” is not accompanied by the modifier “epoxy resin” in Claim 7, Novis Works contends this signifies that the inventors intended for “bisphenol F” to refer only to the monomer. Novis Works also suggests that because “bisphenol F monomer” is never used in the patent, any use of “bisphenol F” refers to monomer. In other words, Novis Works’ objection concerns the consistency with which “bisphenol F” standing alone, without a modifier, is used throughout the patent. Novis Works argues that because “bisphenol F” refers

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to the monomer throughout the patent, the term is used “in a manner consistent with only a single meaning” and the patentee “has defined that term ‘by implication.’” [*Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1271 \(Fed. Cir. 2001\)](#) (quoting [*Vitronics*, 90 F.3d at 1582](#)). This argument fails because, as explained above, “bisphenol F” does not always refer to the monomer throughout the patent, such as when the patent discusses the class of bisphenol-F compounds in the abstract and background. In contrast to the consistently used term “mode” in *Bell Atlantic*, the term “bisphenol F” is used to represent two different meanings throughout the patent. See [262 F.3d at 1273](#) (“[T]he patentees defined the term ‘mode’ by implication, *through the term’s consistent use* throughout the ‘786 patent specification.”) (emphasis added); see also [*Wis. Alumni Research Found. v. Apple Inc.*, 905 F.3d 1341, 1351 \(Fed. Cir. 2018\)](#) (noting that the party had not pointed to “any portion of the specification” that defined the term in a different manner). The varied uses of the term “bisphenol F” in the patent supports the Special Master’s finding that the term should be broadly construed. See [*Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 991 \(Fed. Cir. 1999\)](#) (“Varied use of a disputed term in the written description demonstrates the breadth of the term rather than providing a limited definition.”); see also [*Aventis Pharm. Inc v. Amino Chems. Ltd.*, 715 F.3d 1363, 1374 \(Fed. Cir. 2013\)](#) (“We have previously held that the same claim term can have different constructions depending upon the context of how the term is used within the claims and specification.”) (citation omitted).

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2. Epoxy Resin in the ‘402 Patent’s Specification

The patent’s specification explicitly refers to the epoxy resin, providing in relevant part “[t]he binder preferably contains some bisphenol F epoxy resin.” [‘402 Patent, col. 5, II. 36-37.](#) The patent’s specification “[u]sually . . . is dispositive; it is the single best guide to the meaning of a disputed term.” [Vitronics, 90 F.3d at 1582.](#) The Court must consider the patent as a whole and construe the term “in the context of the entire patent, including the specification.” [Phillips, 415 F.3d at 1313.](#) The claims must be construed in “view of the full specification.” [SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1285 \(Fed. Cir. 2005\).](#) Additionally, “the written description can provide guidance as to the meaning of the claims, thereby dictating the manner in which the claims are to be construed, *even if the guidance is not provided in explicit definitional format.*” [SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1345 \(Fed. Cir. 2001\)](#) (emphasis added). Applying these principles, the reference to the epoxy resin in the patent’s specification supports the Special Master’s reading of the term “bisphenol F” in Claim 7 broadly to encompass more than just the monomer. Notably, the weights of “bisphenol F” in Claim 7 correspond with those of the epoxy resin in the specification. *See* [‘402 Patent col. 5, II. 36-38; col. 12, II. 26.](#) Against this backdrop, the Court agrees that “[t]he use of ‘[bisphenol F]’ in claim 7 as a stand-alone term is a deliberate attempt to secure the broader scope of compounds that encompasses the monomer and epoxy resin, as well as possible other derivatives of bisphenol-F.” [ECF No. 51 at PageID #: 3261.](#)

The Special Master also noted that bisphenol F epoxy resin would reduce the viscosity of the epoxy novolac resin as explicitly stated in both the patent’s specification and preferred

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embodiment in Example 3. See [ECF No. 51 at PageID #: 3259-61](#); [‘402 Patent, col. 5, II. 36-42; col. 11, II. 24-27](#). Although Novis Works successfully demonstrated that the monomer could also reduce the viscosity of the epoxy novolac resin, the Special Master found that it “fail[ed] to demonstrate that the epoxy resin of bisphenol-F should somehow be *excluded* from the construction.” [ECF No. 51 at PageID #: 3261](#) (emphasis in original).

Novis Works contends that the Special Master erroneously relied on expert testimony to discuss the different properties and their ability to reduce the viscosity of the epoxy novolac resin. At one point, the Special Master claims “[e]xpert testimony explains this extrinsic evidence.” [ECF No. 51 at PageID #: 3255](#). Expert testimony “may be useful in claim construction, but it should be considered in the context of the intrinsic evidence.” [Biagro W. Sales, Inc. v. Grow More, Inc., 423 F.3d 1296, 1302 \(Fed. Cir. 2005\)](#) (citing [Phillips, 415 F.3d at 1318-19](#)). The Special Master’s use of expert testimony is permissible because he relied on it to explain the intrinsic evidence. Even if the Special Master erred in this regard, see [ECF No. 51 at PageID #: 3255-56](#), he relied on the intrinsic record overall to determine the appropriate claim construction, making any error harmless:

Like *SciMed*, the specification, with its description of the physical properties of “bisphenol-F” and its ability to reduce the viscosity of the epoxy novolac resin, when coupled with the “preferred” language in the specification at col.5, II. 36-42, along with the specific example that illustrates the invention gives one skilled in the art all the guidance necessary to understand the “bisphenol-F” as used in the claim is intended to *include* the diglycidyl ether of bisphenol-F.

[Id. at PageID #: 3260](#) (emphasis in original). Thus, because the Special Master relied on the intrinsic record to reach his suggested construction, the Court finds no error.

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3. Preferred Embodiments - Example 3 and Claim 1

The Court construes “bisphenol F” in Claim 7 as an umbrella term for all the bisphenol-F alternatives because narrowing the term’s meaning to only the monomer would exclude a preferred embodiment of the patent, namely Example 3. See [*Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1326 \(Fed. Cir. 2013\)](#) (“We have held that ‘a claim interpretation that excludes a preferred embodiment from the scope of the claim is rarely, if ever, correct.’”) (quoting [*On-Line Techs., Inc. v. Bodenseewerk Perkin-Elmer GmbH*, 386 F.3d 1133, 1138 \(Fed. Cir. 2004\)](#)). The monomer is not used in any of the patent’s examples or embodiments. [ECF No. 51 at PageID #: 3257; 3261-62](#). Novis Work contends that Example 3, which explicitly refers to the epoxy resin, would be covered by Claim 1. To be sure, the embodiment does not need to capture each claim in order for it to be a proper claim construction. [*Baran v. Med. Device Techs., Inc.*, 616 F.3d 1309, 1316 \(Fed. Cir. 2010\)](#). Claim 1, however, does not mention either the monomer or the epoxy resin derivative of bisphenol F. See [‘402 Patent at col. 11, II. 35-40; col. 12, II. 1-3](#).

Novis Works retorts that although Claim 1 does not explicitly refer to either the monomer or the epoxy resin of bisphenol F, the use of the term “comprising” in Claim 1 suggests that either may be added. See [*Dippin’ Dots, Inc. v. Mosey*, 476 F.3d 1337, 1343 \(Fed. Cir. 2007\)](#) (“[T]he term ‘comprising’ raises a presumption that the list of elements is nonexclusive.”) (citation omitted); [*Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1345 \(Fed. Cir. 2003\)](#) (“Thus, a claim reciting ‘a widget comprising A and B,’ for example, would be infringed by any widget containing A and B, no matter that C, D, or E might be present.”); [*Genentech, Inc*](#)

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[v. Chiron Corp.](#), 112 F.3d 495, 501 (Fed. Cir. 1997) (“‘Comprising’ is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construction within the scope of the claim.”). Novis Works’ reliance on “comprising” in Claim 1 is unavailing. Although “comprising” indicates that the bisphenol F epoxy resin *may* be added under claim 1, that does not mean it is required. See [Power Mosfet Techs., L.L.C. v. Siemens AG](#), 378 F.3d 1396, 1409 (Fed. Cir. 2004) (“‘Comprising,’ while permitting additional elements not required by a claim, does not remove the limitations that are present.”) (citation omitted). Novis Works’ construction, which would render the claim as not *requiring* bisphenol F epoxy resin, but merely adding them as an optional element, ignores the patent’s specification and excludes the bisphenol F epoxy resin explicitly referred to in Example 3. See [Realtime Data, LLC v. Iancu](#), 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The word ‘comprising’ *does not mean that the claim can be read to require additional unstated elements*, only that adding other elements to the device or method is not incompatible with the claim.”) (emphasis added); [Raytheon Co. v. Sony Corp.](#), 727 F. App’x 662, 672 (Fed. Cir. 2018) (“But, the term ‘comprising’ does not displace, or otherwise allow one to disregard, the patent specification.”). Although Claim 1 is open-ended, it does not explicitly require epoxy resin of bisphenol F. Against this backdrop, Claim 1 would not clearly fall into Example 3 alone. The Court agrees with the Special Master’s finding that adopting Novis Works’ interpretation would leave Example 3 without any meaningful application.

Novis Works contends that the Special Master “incorrectly holds that the ‘402 specification used the term ‘bisphenol-F monomer.’” [ECF No. 53 at PageID #: 3291](#). The Special Master concluded no such thing. Instead, he stated that “[i]n the specification it is clear

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that the inventors knew and used terminology such as ‘bisphenol F epoxy resin’ and ‘bisphenol-F monomer’ and could have readily narrowed the scope of claim 7 by using either of those modifiers.” [ECF No. 51 at PageID #: 3261](#). The Court understands the Special Master to suggest that the patent inventors knew how to refer to the monomer or limit the scope of the terms to the monomer and chose not to do so in Claim 7.⁸

4. Claim Differentiation - Distinguishing Claim 1 and Claim 7

Novis Works maintains that the reference to “bisphenol A epoxy resin” in Claim 1 is further evidence that “when the inventors wanted to claim a bisphenol epoxy resin they expressly used the modifier ‘epoxy resin.’” [ECF No. 53 at PageID #: 3296](#). Comparing claims 1 and 7, however, does not bolster Novis Works’ position. Claim 1 explicitly *excludes* bisphenol A epoxy resin and does not refer to the epoxy resin of bisphenol F. [‘402 Patent at col. 12, II. 2-3](#) (“and wherein said binder system does not contain any bisphenol A epoxy resin”). Had Claim 1 referred to the epoxy resin of bisphenol F, it arguably could support Novis Works’ construction. As it does not, the comparison between the independent claims does not weaken the Special Master’s construction.

5. Patent History

Novis Works suggests the patent history, [ECF No. 33-1](#), indicates that ASK used “bisphenol F” to refer to the monomer. [ECF No. 53 at PageID #: 3284](#). As the Special Master found, the patent history file makes clear that it was distinguishing its inventions from “prior art

⁸ Furthermore, even if the Special Master erred in the manner Novis Works suggests, the error is without significance and the construction is adopted for all the other reasons explained above.

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formulations based on pure bisphenol A epoxy resin or pure bisphenol-F epoxy resin.” [ECF No. 51 at PageID #: 3258](#). By distinguishing the prior art, “the inventors . . . did not intend to disavow any use of bisphenol F epoxy resin in their formulations—they were simply distinguishing between their three component formulations from the prior art formulations made with pure bisphenol-A and bisphenol-F epoxy resins.” *Id.*; see also [3M Innovative Props. Co. v. Tredegar Corp.](#), 725 F.3d 1315, 1322 (Fed. Cir. 2013) (“This court does not rely on the prosecution history to construe the meaning of the claim to be narrower than it would otherwise be unless a patentee limited or surrendered claim scope *through a clear and unmistakable disavowal*.”) (emphasis added); [Lucent Techs., Inc. v. Gateway, Inc.](#), 525 F.3d 1200, 1211 (Fed. Cir. 2008) (“[T]hese statements . . . must be read in the context of its overall argument distinguishing the claimed method from the method disclosed in Busboom.”).

6. Extrinsic Evidence

The Special Master properly rejected the extrinsic evidence and properly relied on the intrinsic evidence to construe the term. [Vitronics](#), 90 F.3d at 1583 (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”) (citations omitted).

Against this backdrop, the Court adopts the Special Master’s suggested construction of the term “bisphenol F” in Claim 7 of the ‘402 Patent.

B. “epoxy novolac resin”

Novis Works contends that “epoxy novolac resin” should be construed to include a functionality limitation “of at least 2.2. to 3.5.” The Special Master found that such a limitation was not present in Claim 7. [ECF No. 51 at PageID #: 3266-68](#). Although not explicitly written

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into Claim 7, Novis Works contends that the functionality limitation is referred to throughout the patent's specifications. The patent's specification provides, in relevant part: "The epoxy novolac resin (a), or blends of epoxy novolac resins, used in the binders, typically have an average epoxide functionality of at least 2.2 to 3.5, preferably from about 2.3 to about 3.0." ['402 Patent, col. 5, II. 26-29](#). Reading a functionality limitation from the specification into the claim is not permissible. See [SciMed, 242 F.3d at 1340](#) (describing the act of reading a limitation into the claims as "one of the cardinal sins of patent law"). Additionally, the Special Master properly noted that the use of the term "typically" in the patent specification indicates that "an epoxy novolac resin may have a functionality outside of the range of at least 2.2. to 3.5." [ECF No. 51 at PageID #: 3267](#).

Furthermore, the Special Master noted that there is a functionality limitation expressly written into Claims 9 and 11, which are dependent upon Claim 7. Given that the inventors placed such a limitation in the dependent claims, the absence of the limitation in Claim 7 suggests that no such limitation should be construed in that claim. See, e.g., [SunRace Roots Enter. Co. Ltd. v. SRAM Corp., 336 F.3d 1298, 1305 \(Fed. Cir. 2003\)](#) (finding that an element should not be read into a claim in which "the cam feature was explicitly included as an element in numerous claims, but not in the claim in suit"); [Phillips, 415 F.3d at 1324](#) (finding that "[t]he inclusion of such a specific limitation on the term" in a separate claim "makes it likely that the patentee did not contemplate that the term " in the disputed claim "already contained that limitation"). Additionally, there is no clear evidence of disavowal of any epoxy novolac resin with a functionality requirement of less than 2.2. See [Poly-Am., L.P. v. API Indus., Inc., 839 F.3d 1131, 1136 \(Fed. Cir. 2016\)](#).

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Accordingly, the Court adopts the Special Master's construction of "epoxy novolac resin."

C. "or mixed with another of said components"

Novis Works has not objected to the Special Master's suggested construction of the term "or mixed with another of said components" in Claim 7 of the ['402 Patent](#). As a result, all objections to the construction of this term have been waived. *See* [ECF No. 23 at PageID #: 344](#). Without objection, the Court adopts the Special Master's construction of "or mixed with another of said components."

IV. Conclusion

For the reasons explained above, Novis Works' objections are overruled. ASK's motion to adopt the Special Master's claim construction is granted. The Special Master's Report and the constructions of the terms in Claim 7 of the '402 Patent contained therein are adopted.

The term "bisphenol F" is construed to mean "'bisphenol F' and specifically includes any of its variants useful in preparation of a portion of an organic binder system for use in preparing aggregate molds or castings, including 'bisphenol-F monomer,' 'bisphenol-F epoxy resin,' and 'bisphenol-F diglycidyl ether.'"

The term "epoxy novolac resin" is "Resin prepared by reacting an epihalohydrin (typically epichlorohydrin) with a phenol novolac, which novolac is formed by the reaction of an aldehyde and a phenol."

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The term “or mixed with another of said components” is construed to mean that “alternatively to being ‘separate components’ certain components of the claimed binder system may be blended or mixed together.”⁹

IT IS SO ORDERED.

July 9, 2020
Date

/s/ Benita Y. Pearson
Benita Y. Pearson
United States District Judge

⁹ As the Special Master noted, “[s]o long as the other claims limitation are satisfied, i.e., (4) is not mixed with (2).” [ECF No. 51 at PageID #: 3271](#).